

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for bonding a surface of a fibrous substrate article surface to a surface of a second substrate article, ~~surface selected from the group consisting of~~ wherein the second substrate article comprises an elastomer substrate article, an engineering plastic substrate article, a metal substrate article, ~~[[and]]~~ or a fiber-reinforced composite substrate article, to form a composite structure, comprising the steps of:

- (a) providing a catalyst at the fibrous substrate article surface;
- (b) contacting the catalyst on the fibrous substrate article surface with a metathesizable material so that the metathesizable material undergoes a metathesis reaction; and
- (c) contacting the fibrous substrate article surface including the metathesizable material with a second substrate article surface whereby bonding between said ~~substrates~~ articles occurs by curing of the metathesizable material ~~there between~~ therebetween.

2. (Currently Amended) ~~[[A]]~~ The method according to claim 1, wherein the fibrous substrate article surface comprises ~~a material selected from the group consisting of~~ polyester, polyethylene, polypropylene, carbon, polyamide nylon ~~[[and]]~~ or aramid polyamide.

3. (Currently Amended) ~~[[A]]~~ The method according to claim 2, wherein the second substrate article ~~surface~~ comprises an elastomeric substrate article.

4. (Currently Amended) ~~[[A]]~~ The method according to claim 3, wherein the elastomeric substrate article is ~~selected from the group consisting of~~ natural rubber, polychloroprene, polybutadiene, polyisoprene, styrene-butadiene copolymer rubber, acrylonitrile-butadiene copolymer rubber, ethylene-propylene copolymer rubber,

ethylene-propylene-diene terpolymer rubber, butyl rubber, brominated butyl rubber, alkylated chlorosulfonated polyethylene rubber, hydrogenated nitrile rubber, poly(n-butyl acrylate), thermoplastic elastomer **[[and]]** or mixtures thereof.

5. (Currently Amended) **[[a]]** The method according to claim 3, wherein the elastomeric substrate article is natural rubber or ethylene-propylene-diene terpolymer rubber.

6. (Withdrawn-Currently Amended) **[[A]]** The method according to claim 1, where step (a) comprises soaking the fibrous substrate article in a catalyst solution in a carrier, and removing the carrier, and step (b) comprises dipping the catalyst-soaked fibrous substrate article into a metathesizable material and allowing polymerization.

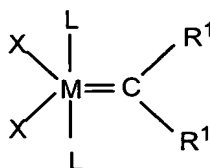
7. (Currently Amended) **[[A]]** The method according to claim 1, wherein step (c) comprises placing the fibrous substrate article between two layers of second substrate article surface in a mold and curing the second substrate article with heat and pressure.

8. (Withdrawn-Currently Amended) **[[A]]** The method according to claim 1, wherein the catalyst is dissolved or mixed into a liquid carrier fluid.

9. (Currently Amended) **[[A]]** The method according to claim 1, wherein the catalyst is included as a component of the fibrous substrate article.

10. (Currently Amended) **[[A]]** The method according to claim 1, wherein the catalyst is ~~selected from at least one of~~ a rhenium compound, ruthenium compound, osmium compound, molybdenum compound, tungsten compound, titanium compound, niobium compound, iridium compound **[[and]]** or MgCl₂, or a combination thereof.

11. (Currently Amended) **[[A]]** The method according to claim 10, wherein the catalyst has a structure represented by



wherein M is OS, Ru or Ir; each R¹ is the same or different and is H, alkenyl, alkynyl, alkyl, aryl, alkaryl, aralkyl, carboxylate, alkoxy, allenylidenyl, indenyl, alkyl-alkenylcarboxy, alkenylalkoxy, alkenylaryl, alkynylalkoxy, aryloxy, alkoxycarbonyl, alkylthio, alkylsulfonyl, alkylsulfinyl, amino or amido; X is the same or different and is either an anionic or a neutral ligand group; and L is the same or different and is a neutral electron donor group.

12. (Currently Amended) **[[A]]** The method according to claim 11, wherein X is Cl, Br, I, F, CN, SCN, N₃, O-alkyl or O-aryl; L is a heterocyclic ring or Q(R²)_a, wherein Q is P, As, Sb or N; R² is H, cycloalkyl, alkyl, aryl, alkoxy, arylate, amino, alkylamino, arylamino, amido or a heterocyclic ring; and a is 1, 2 or 3; M is Ru; and R¹ is H, phenyl, -CH=C(phenyl)₂, -CH=C(CH₃)₂ or -C(CH₃)₂(phenyl).

13. (Currently Amended) **[[A]]** The method according to claim 10, wherein the catalyst is a phosphine-substituted, an imidazolylidene-substituted, or a dihydro-imidazolylidene-substituted ruthenium carbene.

14. (Currently Amended) **[[A]]** The method according to claim 13, wherein the catalyst is bis(tricyclohexylphosphine)benzylidene ruthenium (V) dichloride, tricyclohexylphosphine [1,3-bis(2,4,6-trimethylphenyl)-4,5-dihydroimidazol-2-ylidene] [benzylidene] ruthenium (IV) dichloride, or tricyclohexylphosphine[1,3-bis(2,3,6-trimethylphenyl)-4,5-imidazol-2-ylidene][benzylidene]ruthenium (IV) dichloride.

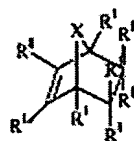
15. (Currently Amended) **[[A]]** The method according to claim 1, wherein the catalyst is stable in the presence of moisture and oxygen and can initiate polymerization of the metathesizable material upon contact at room temperature.

16. (Currently Amended) **[[A]]** The method according to claim 1, wherein the metathesizable material is ~~selected from~~ ethane, α -alkene, acyclic alkene, acyclic diene, acetylene, cyclic alkene, cyclic polyene **[[and]]** or mixtures thereof.

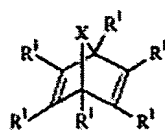
17. (Currently Amended) **[[A]]** The method according to claim 16, wherein the metathesizable material comprises a cycloolefin cyclic alkene.

18. (Currently Amended) **[[A]]** The method according to claim 17, wherein the metathesizable material is a monomer or oligomer ~~selected from~~ of norbornene, cycloalkene, cycloalkadiene, cycloalkatriene, cycloalkatetraene, or aromatic-containing cycloolefin **[[and]]** or mixtures thereof.

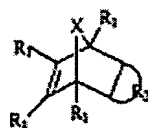
19. (Currently Amended) **[[A]]** The method according to claim 18, wherein the metathesizable material has a structure represented by



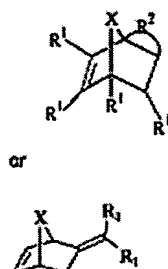
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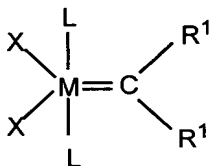
wherein X is CH_2 , CHR^3 , $\text{C}(\text{R}^3)_2$, O, S, N-R^3 , P-R^3 , O=P-R^3 , $\text{Si}(\text{R}^3)_2$, B-R^3 or As-R^3 ; each R^1 is independently H, CH_2 , alkyl, alkenyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, aralkyl, halogen, halogenated alkyl, halogenated alkenyl, alkoxy, oxyalkyl, carboxyl, carbonyl, amido, (meth)acrylate-containing group, anhydride-containing group, thioalkoxy, sulfoxide, nitro, hydroxy, keto, carbamato, sulfonyl, sulfonyl, carboxylate, silanyl, cyano or imido; R^2 is a fused aromatic, aliphatic or heterocyclic or polycyclic ring; and R^3 is alkyl, alkenyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, aralkyl or alkoxy.

20. (Currently Amended) **[[A]]** The method according to claim 17, wherein the metathesizable material comprises ethylenenorbornene monomer or oligomer, dicyclopentadiene or bicycle[2.2.1]hept-5-en-2-yl-trichlorosilane.

21. (Withdrawn-Currently Amended) **[[A]]** The method for bonding a fibrous substrate article to an elastomeric substrate article comprising the steps of:

- (a) ~~applying~~ providing a catalyst on a surface on the fibrous substrate article;
- (b) contacting the catalyst on the fibrous substrate article with a metathesizable material so that the metathesizable material undergoes a metathesis reaction;
- (c) contacting the fibrous substrate article with the elastomeric substrate article to form a composite material; and
- (d) curing said composite material.

22. (Withdrawn-Currently Amended) **[[A]]** The method according to claim 21, wherein the catalyst has a structure represented by



wherein M is OS, Ru or Ir; each R¹ is the same or different and is H, alkenyl, alkynyl, alkyl, aryl, alkaryl, aralkyl, carboxylate, alkoxy, allenylidenyl, indenyl, alkyl-alkenylcarboxy, alkenylalkoxy, alkenylaryl, alkynylalkoxy, aryloxy, alkoxycarbonyl, alkylthio, alkylsulfonyl, alkylsulfinyl, amino or amido; X is the same or different and is either an anionic or a neutral ligand group; and L is the same or different and is a neutral electron donor group.

23. (Withdrawn-Currently Amended) **[[A]]** The method according to claim 22, wherein X is Cl, Br, I, F, CN, SCN, N₃, O-alkyl or O-aryl; L is a heterocyclic ring or Q(R²)_a, wherein Q is P, As, Sb or N; R² is H, cycloalkyl, alkyl, aryl, alkoxy, arylate, amino, alkylamino, arylamino, amido or a heterocyclic ring; and a is 1, 2 or 3; M is Ru; and R¹ is H, phenyl, -CH=C(phenyl)₂, -CH=C(CH₃)₂ or -C(CH₃)₂(phenyl).

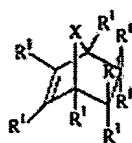
24. (Withdrawn-Currently Amended) **[[A]]** The method according to claim 21, wherein the catalyst is a phosphine-substituted, an imidazolylidene-substituted, or a dihydro-imidazolylidene-substituted ruthenium carbene.

25. (Withdrawn-Currently Amended) **[[A]]** The method according to claim 24, wherein the catalyst is bis(tricyclohexylphosphine)benzylidene ruthenium (V) dichloride, tricyclohexylphosphine[1,3-bis(2,4,6-trimethylphenyl)-4,5-dihydroimidazol-2-ylidene][benzylidene] ruthenium (IV) dichloride, or tricyclohexylphosphine[1,3-bis(2,3,6-trimethyl-phenyl)-4,5-imidazol-2-ylidene][benzylidene]ruthenium (IV) dichloride.

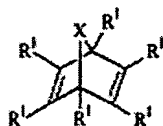
26. (Withdrawn-Currently Amended) **[[A]]** The method according to claim 21, wherein the metathesizable material comprises a cycloolefin.

27. (Withdrawn-Currently Amended) **[[A]]** The method according to claim 26, wherein the metathesizable material is a monomer or oligomer ~~selected from~~ of norbornene, cycloalkene, cycloalkadiene, cycloalkatriene, cycloalkatetraene, aromatic-containing cycloolefin **[[and]]** or mixtures thereof.

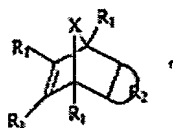
28. (Withdrawn-Currently Amended) **[[A]]** The method according to claim 27, wherein the metathesizable material comprises a norbornene having a structure represented by



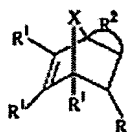
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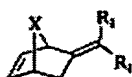
or



or



or



wherein X is CH₂, CHR³, C(R³)₂, O, S, N-R³, P-R³, O=P-R³, Si(R³)₂, B-R³ or As-R³; each R¹ is independently H, CH₂, alkyl, alkenyl, cycloalkyl, cycloalkenyl, aryl, alkaryl,

aralkyl, halogen, halogenated alkyl, halogenated alkenyl, alkoxy, oxyalkyl, carboxyl, carbonyl, amido, (meth)acrylate-containing group, anhydride-containing group, thioalkoxy, sulfoxide, nitro, hydroxy, keto, carbamato, sulfonyl, sulfonyl, carboxylate, silanyl, cyano or imido; R^2 is a fused aromatic, aliphatic or heterocyclic or polycyclic ring; and R^3 is alkyl, alkenyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, aralkyl or alkoxy.

29. (Withdrawn-Currently Amended) ~~[[A]]~~ The method according to claim 26, wherein the metathesizable material comprises ethylenenorbornene monomer or oligomer, dicyclopentadiene or bicycle[2.2.1]hept-5-en-2-yl-trichlorosilane.

30. (Withdrawn-Currently Amended) ~~[[A]]~~ The method according to claim 21, wherein the fibrous substrate article is ~~selected from the group consisting of~~ polyester, polyethylene, polypropylene, carbon, polyamide nylon ~~[[and]]~~ or aramid polyamide.

31. (Withdrawn-Currently Amended) ~~[[A]]~~ The method according to claim 30, wherein the ~~second~~ elastomeric substrate article ~~surface is selected from the group consisting of~~ natural rubber, polychloroprene, polybutadiene, polyisoprene, styrene-butadiene copolymer rubber, acrylonitrile-butadiene copolymer rubber, ethylene-propylene copolymer rubber, ethylene-propylene-diene terpolymer rubber, butyl rubber, brominated butyl rubber, alkylated chlorosulfonated polyethylene rubber, hydrogenated nitrile rubber, poly(n-butyl acrylate), thermoplastic elastomer ~~[[and]]~~ or mixtures thereof.

32. (Withdrawn-Currently Amended) ~~[[A]]~~ The method according to claim 21, wherein the elastomeric substrate article is natural rubber or ethylene-propylene-diene terpolymer rubber.

33. (Withdrawn-Currently Amended) ~~[[A]]~~ The method according to claim 21, wherein steps (a) and (b) take place at room temperature.

34-48 (Canceled)

49. (Withdrawn-Currently Amended) The method according to claim 21, wherein said fibrous substrate article is a reinforcing cord and said ~~second~~ elastomeric substrate article is an elastomer flowed through the reinforcing cord and cured to form a tire, belt or hose.

50. (Currently Amended) The method according to claim 1, wherein said fibrous substrate article is a reinforcing cord and said second substrate article is a post-vulcanized or cured elastomer.